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- (71) Applicant (*for all designated States except US*): PLANT BIOSCIENCE LIMITED [GB/GB]; Norwich Research Park, Colney Lane, Norwich, Norfolk NR4 7UH (GB).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): JANSSON, Christer [SE/SE]; Skolvagen 10, S-18641 Vallentuna (SE). SUN, Chuanxin [CN/SE]; Eva Lagerwalls vag 22, S-75643 Uppsala (SE).
- (74) Agents: KREMER, Simon, M. et al.; Mewburn Ellis, York House, 23 Kingsway, London, Greater London WC2B 6HP (GB).
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(57) **Abstract:** Provided are nucleotide sequences which encodes a sugar-signalling transcription factors capable of activating a promoter of a gene encoding an enzyme involved in the synthesis or deposition of starch e.g. in response to sugar levels in a plant. Preferred sequences encode WRKY proteins such as the sugar signaling in barley2 (SUSIBA2) factor and variants thereof, and act on promoters which comprise at least one SURE element and/or W box element to which the transcription factor binds (e.g. promoters such as *isol*, *sbel*, *sbellb*, *ssl*, *agpase5*). The invention also provides related methods and materials e.g. for activating, modulating, and investigating the elements present in such promoters.

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